FlyBy Math™ Alignment
Arkansas Mathematics Curriculum Framework

Solving Equations and Inequalities

Content Standard 2. Students will write, with and without appropriate technology equivalent forms of equations, inequalities, and systems of equations and solve with fluency.

Student Learning Expectation	***FlyBy Math*™ Activities**
SEI.2.AI.2 Solve systems of two linear equations • numerically (from a table or guess and check) • algebraically (including the use of manipulatives) • graphically • technologically	--Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios. --Represent distance, speed, and time relationship for constant speed cases using tables, bar graphs, line graphs, equations, and a Cartesian coordinate system.
SEI.2.AI.3 Solve linear *formulas* and *literal equations* for a specified *variable* (Ex. Solve for p in I = prt.)	--Use the distance-rate-time formula to predict and analyze aircraft conflicts.
SEI.2.AI.5 Solve real world problems that involve a combination of rates, *proportions* and percents	--Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios. --Compare airspace scenarios for both the same and different starting conditions and the same and different rates.
SEI.2.AI.6 Solve problems involving *direct variation* and indirect *(inverse) variation* to model rates of change	--Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios. --Compare airspace scenarios for both the same and different starting conditions and the same and different rates.
SEI.2.AI.7 Use coordinate geometry to represent and/or solve problems (midpoint, length of a line segment, and *Pythagorean Theorem*)	--Represent distance, speed, and time relationship for constant speed cases using tables, bar graphs, line graphs, equations, and a Cartesian coordinate system.
SEI.2.AI.8 Communicate real world problems graphically, algebraically, numerically and verbally	--Use tables, bar graphs, line graphs, equations, and a Cartesian coordinate system to draw conclusions. --Explain and justify solutions regarding the motion of two airplanes using the results of plotting points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system.

Linear Functions

Content Standard 3. Students will analyze functions by investigating rates of change, intercepts, and zeros.

Student Learning Expectation	***FlyBy Math™* Activities**
LF.3.AI.5 Interpret the rate of change/*slope* and intercepts within the context of everyday life (Ex. telephone charges based on base rate (*y-intercept*) plus rate per minute (slope))	--Interpret the slope of a line in the context of a distance-rate-time problem.
LF.3.AI.6 Calculate the slope given - two points - the graph of a line - the equation of a line	--Interpret the slope of a line in the context of a distance-rate-time problem.
LF.3.AI.9 Describe the effects of parameter changes, slope and/or y-intercept, on graphs of linear functions and vice versa	--Interpret the slope of a line in the context of a distance-rate-time problem. --Explain and justify solutions regarding the motion of two airplanes using the results of plotting points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system. --Compare airspace scenarios for both the same and different starting conditions and the same and different rates.

Data Interpretation and Probability

Content Standard 5. Students will compare various methods of reporting data to make inferences or predictions

Student Learning Expectation	***FlyBy Math™* Activities**
DIP.5.AI.10 Communicate real world problems graphically, algebraically, numerically and verbally	--Use tables, bar graphs, line graphs, equations, and a Cartesian coordinate system to draw conclusions. --Explain and justify solutions regarding the motion of two airplanes using the results of plotting points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system.